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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,231

09/08/2005

Reinhard Plaschka

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03/04/2008

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SUITE 800

WASHINGTON, DC 20005

EXAMINER

GRABOWSKI, KYLE ROBERT

ART UNIT

PAPER NUMBER

3722

NOTIFICATION DATE

DELIVERY MODE

03/04/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/521,231	PLASCHKA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kyle Grabowski	3722	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 27 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Examiner's Comments*

This action is in reply to the amendment filed December 27, 2007

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-5, 7-8, 10-16, 23-26, 28, 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4507346) and Heckenkamp (US 4988126) in view of Boehm et al (2004/0239097).

In respect to claims 1-4, 14, and 23, Maurer discloses a multilayer security element including a paper 10 (Fig. 2) and a tangible marking in the form of a relief structure 13 (Fig. 2) that is “burned or discolored in the area of the data in relief” (Col. 8, Lns 25-26) by “absorption of the laser” (Col. 8, Ln 20).

In respect to claims 5, 10-13, and 33, Maurer discloses that the “height of the relief is precisely controlled by adjusting the laser energy” (Clm. 18); this includes controlled specific heights of 30-100 micrometers as well as 30-80 micrometers; the relief, which contains information such as “letters, numbers, patterns, pictures and so on,” (Abstract) are shown connected together with regard to content (creating words) 6 (Fig 1); for additional security the document can contain different information in regard to content such as a “congruent inscription of the data in relief” (Col. 5, Lns 54-55).

In respect to claims 15 and 16, Maurer discloses a relief structure 44 (Fig 5) partially disposed in a coating 41 and 42 (Fig 3), of which coating cover films 41 and 42 are multilayered.

In respect to claims 24-26, 28 and 30-31, a method of “producing an information carrier structure in relief” (Clm. 17) wherein the “height of the relief is precisely controlled by adjusting the laser energy as to its intensity and exposure time” (Clm. 18) is taught in Maurer. Also, “[i]n the process, card inlay 20 (paper substrate) is itself burned or discolored in the area of the data in relief” (Col. 8, Lns 23-26). The cover coating 11 (Fig. 2) is applied before laser inscription (Col. 7, Lns 17-18); the tangible marking 13 is produced in the area of this coating (see Fig. 2). A Nd-YAG laser

treatment is preferred (Col. 7, Lns 18-19). The Nd-YAG laser used for security printing is inherently high-speed as is known in the art.

Maurer teaches all of the limitations of claims 1-5, 10-16, 23-26, 28, 30-31, and 33, except for the material of the substrate in which the relief is created. The inventive relief taught in Maurer is created in transparent foamable synthetic material disposed directly above the security paper wherein the application in question applies the laser and subsequent relief to the paper substrate itself. Heckenkamp et al. (US 4988126) discloses "relief structures can also be produced directly on the document" by a laser beam (Col. 8, Lns 55-59).

In respect to claims 32, 35, and 36, Heckenkamp et al. also explicitly states bank notes and ID cards as examples of his inventive document (Col. 1, Ln 10). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the inventive laser treatment and substrate characteristics taught in Maurer with the less complex inventive surface relief by applying the laser to the paper in view of Heckenkamp et al. to minimize cost and undue complexity; it is also within the purview of one skilled in the art to apply the inventive document relief onto an ID card or bank note specifically.

Maurer as modified by Heckenkamp substantially disclose the claimed subject matter for the reasons stated above but do not disclose the particular makeup of the paper. Boehm discloses "cotton fibers or other fibers from annuals," (Para 0092, Lns 2-3) as well as replacement of "part of said natural fibers by polymer fibers" (Para 0092,

Lns 4-5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to substitute the inventive laser treatment and substrate characteristics taught in Maurer applied directly to the paper substrate taught in Heckenkamp et al. with a annual fiber/plastic composite in view of the of Boehm in order to utilize the high strength and tear resistance of cotton/plastic hybrid fibers.

4. Claims 6, 17-18, 20-22, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4507346) and Heckenkamp et al. (US 4988126) in view of Boehm et al (2004/0239097) as applied to claims 1, 15, 16, and 24 above, and in further view of Solmsdorf (US 6082778).

In respect to claims 6, 17-18, and 20-21, Maurer additionally discloses a security paper 10 (Fig 2) and a tangible marking in the form of a relief structure 13 (Fig 2) having multiple layers. Heckenkamp et al. discloses creating the relief in the paper substrate. Maurer and Heckenkamp et al. do not disclose additives that intensify the color or relief in certain areas, a plastic layer and metal layer with the metal layer removed at least in the area by a laser, nor incorporation of a print into the coating layer. Solmsdorf discloses: a plastic layer 6 (Fig 4), a metal layer 7 (Fig 4), and cavities of removed metal via laser 10 (Fig 4). The plastic layer consists of a "diffraction pattern" (Clm 6). There is a junction between metal foil 7 and card layer 9 (Fig 4); the tangible marking 5b extends beyond the foil/card (Fig 2). Solmsdorf also teaches a transparent cover layer "provided with any desired design print on its surface or back"(Col. 7, Lns 1-2); additives that are

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“organic or inorganic pigments, colorants or other additives, that cause the laser beam to be more highly absorbed or cause coloring by irradiation with the laser” are also disclosed (Col. 4, Lns. 66-67- Col. 5 Lns. 1-2). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the inventive laser treatment and substrate characteristics taught in Maurer applied directly to the paper substrate taught in Heckenkamp et al. composed of cotton fibers in view of Boehm with the copy protection element and additives in view of Solmsdorf in order maximize security by utilizing both features in unison under the same laser.

In respect to claims 19 and 22, Maurer teaches that the “height of the relief is precisely controlled by adjusting the laser energy as to its intensity and exposure time” (Clm. 18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to create a larger metal reduction area relative to the tangible marking by adjusting the laser characteristics to vaporize a particular radius of metal; furthermore, the applicant does not state a purpose or advantage for the transparent border resulting from this treatment.

It would have also been obvious to one of ordinary skill in the art at the time the invention was made that a tangible relief marking disposed underneath a printed coating layer as taught in Maurer and Heckenkamp et al. in view of Boehm and in further view of Solmsdorf will naturally result in an optically variable element i.e. stretching of the printed layer.

In respect to claim 29, Maurer teaches a method of “producing an information carrier structure in relief” (Clm. 17) wherein the “height of the relief is precisely controlled by adjusting the laser energy as to its intensity and exposure time” (Clm. 18). Also, “[i]n the process, card inlay 20 (paper substrate) is itself burned or discolored in the area of the data in relief” (Col. 8, Lns 24-26). Maurer does not specify a coating that is a multilayer security element applied by the transfer method. Solmsdorf discloses the identity card 1 with “copy protection element 2 (Fig. 1) applied to the cover layer of the identity card by the transfer method” (Col. 3, Ln 25-26).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the inventive laser treatment and substrate characteristics taught in Maurer applied directly to the paper substrate taught in Heckenkamp et al. in view of Boehm with a copy protection element in view of Solmsdorf via the transfer method which is well known in the art.

5. Claim 9 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4507346) and Heckenkamp et al. (US 4988126) in view of Boehm et al (2004/0239097) as applied to claims 1 and 24 above, and in further view of Adamczyk et al. (US 2004/0050269).

Maurer discloses a security paper 10 (Fig 2) and a tangible marking in the form of a relief structure 13 (Fig 2). Maurer does not disclose specific variations in relief structure. While Maurer discloses a method of varying the relief structure heights, he does not disclose specific height variations. Adamczyk et al. discloses characters and/or



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elements have different relief heights, resulting in a “modulated” surface structure. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the inventive laser treatment and substrate the characteristics taught in Maurer applied directly to the paper substrate taught in Heckenkamp et al. composed of cotton fibers in view of Boehm with the varying relief technique taught in Adamczyk et al. to further increase security by making tactile sensations directionally dependent.

### ***Response to Arguments***

6. In re Claims 1, 14, and 24, the arguments have been fully considered but are not persuasive.

The newly amended material in these independent claims does not overcome the cited prior art. The independent claims now state that the security paper has a tangible marking and also includes cotton fibers; there is no statement however in the claims with regards to the tangible marking being formed *within* the cotton fibers themselves and therefore the rejections stand.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle Grabowski whose telephone number is (571)270-3518. The examiner can normally be reached on Monday-Thursday, every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571)272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kyle Grabowski/  
Examiner, Art Unit 3722

/Monica S. Carter/  
Supervisory Patent Examiner, Art Unit 3722